

REMARKS

Summary of Office Action

Claims 1-27 are pending in the above-identified patent application.

The Examiner has rejected claims 1-10, 14, 15 and 17-27 under 35 U.S.C. § 103(a) as being obvious from certain allegedly admitted prior art in view of Henkel U.S. Patent 6,055,644. Claims 11-13 have been rejected under 35 U.S.C. § 103(a) as being obvious from the allegedly admitted prior art and Henkel, further in view of Swoboda et al. U.S. Patent 5,903,746. Claim 8 also has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicants regard as the invention.

Claim 16 has been objected to as depending from a rejected base claim, but allowable subject matter has been indicated.

Summary of Applicant's Reply

Applicants note with appreciation the indication of allowable subject matter in claim 16, and have rewritten claim 16 in independent form.

Applicants have amended the specification to correct some minor typographical/clerical errors, and have amended claims 1, 8 and 27 (in addition to claim 16) in order to more particularly define the invention. The Examiner's rejections are respectfully traversed.

Applicants' Reply to the Rejection Under 35 U.S.C. § 112

Claim 8 has been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for allegedly failing to particularly point out and distinctly claim the subject matter that applicants regard as the invention. This rejection is respectfully traversed.

The Examiner has not specified the alleged indefiniteness except by the one-word sentence "Unclear." Applicants have reviewed the claim, and discovered that the word "at" was missing from the phrase "one said at least one transmit clock." Applicants thank the Examiner for pointing out that typographical error. Applicants have amended claim 8 to insert the missing word and respectfully submit that claim 8, as amended, is clear.*

Accordingly, applicants respectfully submit that the rejection under 35 U.S.C. § 112 should be withdrawn. Applicants respectfully request that if the Examiner continues to find claim 8 unclear, the Examiner telephone the undersigned prior to issuing a further rejection.

Applicant's Reply to the
Prior Art Rejections

Claims 1-10, 14, 15 and 17-27 have been rejected under 35 U.S.C. § 103(a) as being obvious from the allegedly admitted prior art in view of Henkel. Claims 11-13 have been rejected under 35 U.S.C. § 103(a) as being obvious from the allegedly admitted prior art and Henkel, further in view of Swoboda. These rejections are respectfully traversed.

Applicant's invention, as defined by the pending claims, as amended, is a serial interface for use in a programmable logic device. The serial interface includes a plurality of channels, each of the channels including at least transmit circuitry. Central control circuitry in the interface includes at least one clock source for generating at least one transmit clock for use by the transmit circuitry in each of the channels. Each transmit clock in the central control circuitry has a respective first clock rate. Clock division circuitry in a plurality of the

* Applicant respectfully submits that because it merely clarifies what was already in the claim, this amendment is not a substantial amendment, or a narrowing amendment, under the doctrine of Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 62 USPQ2d 1705 (2002), and related cases.

channels provides a plurality of respective channel-derived clocks based on the central transmit clock. Each channel-derived clock has a second clock rate at most equal to the first clock rate. The clock division circuitry in each of that plurality of channels is controllable independently of the clock division circuitry in any other of the plurality of channels. As a result, each of the plurality of channels can have an independently controllable clock rate.

All of the rejected claims have been rejected based at least in part on the combination of the allegedly admitted prior art and Henkel.* Applicants respectfully submit that that combination, even if proper (i.e., even if the motivation or suggestion required by law is present**), does not show or suggest the claimed invention.

In particular, applicants have amended claims 1 and 27 to define that a plurality of the channels have the claimed clock division circuitry, and that the clock division circuitry in any one of those channels is controllable independently of the clock division circuitry in the others of those channels. The amendments are fully supportable in the specification as filed, including, without limitation, paragraph [0004] (particularly page 2, lines 9-12) and paragraph [0026] (particularly page 8, lines 21-34).

Thus, claims 1 and 27, as amended, define an interface (or a programmable logic device with an interface) in which each channel can be set independently to a different clock, based on an independently controllable divider. The combination of the allegedly admitted prior art and Henkel does not show independent control of the

* To the extent that the allegedly admitted prior art, characterized by the Examiner as Paragraph [0002] of applicants' specification, includes a description of the XAUI standard, applicants admit only that the XAUI standard is prior art to the present invention.

** Applicants do not admit that that motivation or suggestion is present.

dividers. In particular, Henkel teaches (column 8, lines 17-21) that dividers 160aa-160zz (as well as central divider 160) are all set to the same divisor to generate clocks having the same period (although the channel clocks are uniformly delayed relative to the central clock). This is because the dividers in Henkel are not for the purpose of generating independent clocks, but for generating time slices to allow multiplexing. For multiplexing to work, it is inherent that all of the time slices have to be the same. Accordingly, the combination does not show applicants' claimed invention, and there is no suggestion to modify the combination to create applicants' invention -- indeed, there is a teaching away -- because multiplexing requires identical, rather than independent, clocks.

Swoboda does not make up the deficiencies of the allegedly admitted prior art and Henkel in failing to show or suggest the claimed invention. Swoboda is cited by the Examiner only for its alleged showing of a clock source that includes multiple clocks, and does not show or suggest a multi-channel system in which individual channels derive independent clocks from a central clock.

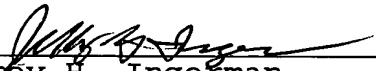
For these reasons, applicant respectfully submits that claim 1 and its dependent claims 2-15 and 17-26, as well as claim 27, are patentable.

Conclusion

For the reasons set forth above, applicants respectfully submit that this application, as amended, is

in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

Respectfully submitted,



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